DESCRIPTIONS OF THREE NEW SPECIES OF *THRASSIS* JORDAN AND THE FEMALES OF *T. BACCHI* (ROTHS.) AND *T. PANSUS* (JORDAN)[1]

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Among the fleas collected by the field forces of the Plague Investigation Station, United States Public Health Service, in the course of investigating the distribution of Plague in the Western States, specimens of the genus *Thrassis* were obtained which are considered representative of new species. Females of *T. bacchi* and *T. pansus* which have not been described previously were also collected.

Thrassis setosis Prince, new species

Male and female. Frons with ocular row of 3 bristles, median bristle small; one small bristle above ocular row in the female and 2 in the male. The postantennal region of the head has a row of minute bristles along the border of the antennal groove in addition to 1 large bristle and a posterior row of 1 large and 2 small bristles. Labial palpi five-jointed and extending well beyond apex of trochanter as in *T. g. gladiolis* (Jordan).

Pronotal ctenidium with 16 or 17 spines. Apical spines on metanotum 2; abdominal tergites II, III and IV, 1 or 2.

Hind tarsal segment I equal to II, III and IV together.

Modified segments—Female. Antepygidial bristles 3, median one longest. Head of receptaculum seminis globular; tail short, broadest in distal half; similar to *T. g. gladiolis*. Sternite VII without sinus, there are 8 or 9 bristles on each side (fig. 6). Stylet one-half as broad as long and bears an apical bristle in addition to 2 lateral bristles.

Modified segments—Male. Antepygidial bristles 1. Tergite VIII with 8 or 9 large bristles along posterio-ventral border in addition to 5 large dorsal bristles. Manubrium dilated distally and truncated. Immovable process (P) of clasper dome-shaped, shorter than movable finger (F). Movable finger convex on posterior border and armed with 1 long bristle distally and 3 shorter pale bristles more proximally; apex with straight cut along anterior face and concave near base of finger on anterior border. Sternite VIII broad with sclerified line near ventral edge; armed with 4 or 5 apical bristles, 2 long subapical and 2 or 3 smaller bristles. Internal portion of sternite IX broadest near apex or dorsal end; proximal lobe broad and rounded with 3 large, flattened, dark spines near apex in addition to 1 or 2 pale bristles;

[1] From the Plague Investigation Station, San Francisco, California.

upper lobe broad with numerous pale bristles along posterior border and minute bristles scattered over entire lobe on anterior portion (fig. 5).

Length. Female, 2.4 to 2.7 mm., average 2.55 mm.; male, 1.96 to 2.07 mm., average 1.98 mm.

Type locality. Yuma County, Arizona.

Type host. *Citellus harrisii saxicola* (Mearns).

The holotype and allotype were collected 11 miles east of YUMA, YUMA COUNTY, ARIZONA, April 6, 1938.

Paratypes. YUMA COUNTY, ARIZONA, 5 females and 1 male from the type host. YAVAPAI COUNTY, ARIZONA, 42 females and 27 males from the type host and 2 females from *Citellus variegatus grammurus* (Say), 2 females and 1 male from *Neotoma lepida stephensi* (Goldman), 1 female from *Peromyscus leucopus arizonae* (Allen), 2 females from *Zapus*. sp.

The holotype and allotype are deposited in the collection of the United States Public Health Service Plague Investigation Station, San Francisco, California. Paratypes have been deposited at the University of California, Berkeley, California, the California Academy of Sciences, San Francisco, California, and the United States National Museum, Washington, D. C.

Thrassis aridis Prince, new species

Male and female. Frons with an ocular row of 3 bristles, the median one small; two small bristles dorsal to ocular row. The occiput bears along the border of the antennal groove a row of minute bristles and a large bristle opposite about the center of the groove and a posterior row of 4 bristles, the ventral one of which is large. Labial palpi five-jointed, extending to apex of forecoxae or slightly beyond.

The pronotal ctenidium has 15 to 17 spines. Apical spines on each side of metanotum, 2; abdominal tergites vary but usually I and III, 1, II, 2 in male; female I and II, 1. Tergites II to VII with two rows of bristles.

Hind tarsal segment I shorter than II to IV together.

Modified segments—Female. Head of receptaculum seminis longer than broad. Tail of receptaculum seminis long with tip well sclerified. Sternite VII with sinus, upper lobe small and attenuated (fig. 2). There are 7 to 10 bristles on each side of sternite VII. Stylet approximately three times as long as broad and has an apical bristle in addition to 2 lateral bristles.

Modified segments—Male. Manubrium of process gradually tapering from base to apex, curving slightly upward, resembling *T. fotus* (Jordan), but not as pointed. Immovable process (P) of clasper shorter than movable finger (F) with the apex pointed

posteriorly. The movable process nearly symmetrical and has 4 bristles on posterior border, basal 2 largest. Proximal lobe of sternite IX with 4 pale bristles. Distal lobe with numerous minute bristles. Parameres boot-shaped (fig. 1). Two long acetabular bristles.

Length. Female 2.02 to 2.52 mm., average 2.17 mm.; male 1.35 to 1.87 mm., average 1.69 mm.

Type locality. Pima County, Arizona, and Santa Cruz County, Arizona.

Type host—*Dipodomys merriami.* Holotype male was collected 15 miles northwest of NOGALES, SANTA CRUZ COUNTY, ARIZONA. Allotype female was collected 13 miles north of TUCSON, PIMA COUNTY, ARIZONA, February, 1939.

Paratypes. PIMA COUNTY, ARIZONA, 2 females; COCHISE COUNTY, ARIZONA, 1 male and 1 female; PINAL COUNTY, ARIZONA, 3 females; SANTA CRUZ COUNTY, ARIZONA, 2 males; GREENLEE COUNTY, ARIZONA, 1 male; all taken on the type host. In addition to those collected on the type host 2 males were collected in Greenlee County, Arizona, from *Neotoma lepida;* 1 male was taken in MOHAVE COUNTY, ARIZONA, from *Onychomys leucogaster;* 2 males were taken in HIDALGO COUNTY, NEW MEXICO, 1 from *Onychomys leucogaster* and 1 from *Dipodomys ordii.*

The holotype and allotype are deposited in the United States Public Health Service Plague Investigation Station, San Francisco, California. Paratypes are deposited in the United States National Museum, Washington, D. C., and the University of California, Berkeley, California.

Thrassis campestris Prince, new species

This species is closely related to *Thrasssi aridis,* except for the modified segments.

Modified segments—Female. Tail of receptaculum seminis without sclerified tip; shorter and broader than *T. aridis.* Sternite VII with deeper and pigmented sinus (fig. 4). Stylet short, approximately one-half as broad as long, with an apical and 3 lateral bristles.

Modified segments—Male. Sternite VIII with 3 long and 4 short bristles. Proximal and distal lobes of sternite IX longer and broader than in *T. aridis.* Movable process of clasper same general shape as *T. aridis* but bears 7 bristles on posterior border. Only 1 long acetabular bristle (fig. 4).

Length: Female, 2.40 to 2.85 mm., average 2.60 mm.; male, 1.95 to 2.47 mm., average 2.16 mm.

Type locality. Hooker and Grant Counties, Nebraska.

Type host—*Dipodomys ordii.* Holotype male was collected 7 miles west of MULLEN, HOOKER COUNTY, NEBRASKA. Allotype female was collected 6 miles north of ASHBY, GRANT COUNTY, NEBRASKA.

Paratypes. GRANT COUNTY, NEBRASKA, 2 females and 5 males from *Dipodomys ordii* and 1 male from *Onychomys leucogaster;* HOOKER COUNTY, NEBRASKA, 2 males from *Dipodomys ordii* and 2 females and 3 males from *Onychomys leucogaster;* CHERRY COUNTY, NEBRASKA, 2 males from *Dipodomys ordii;* GARDEN COUNTY, NEBRASKA, 1 female and 1 male from *Dipodomys ordii* and 1 male from *Peromyscus maniculatus.*

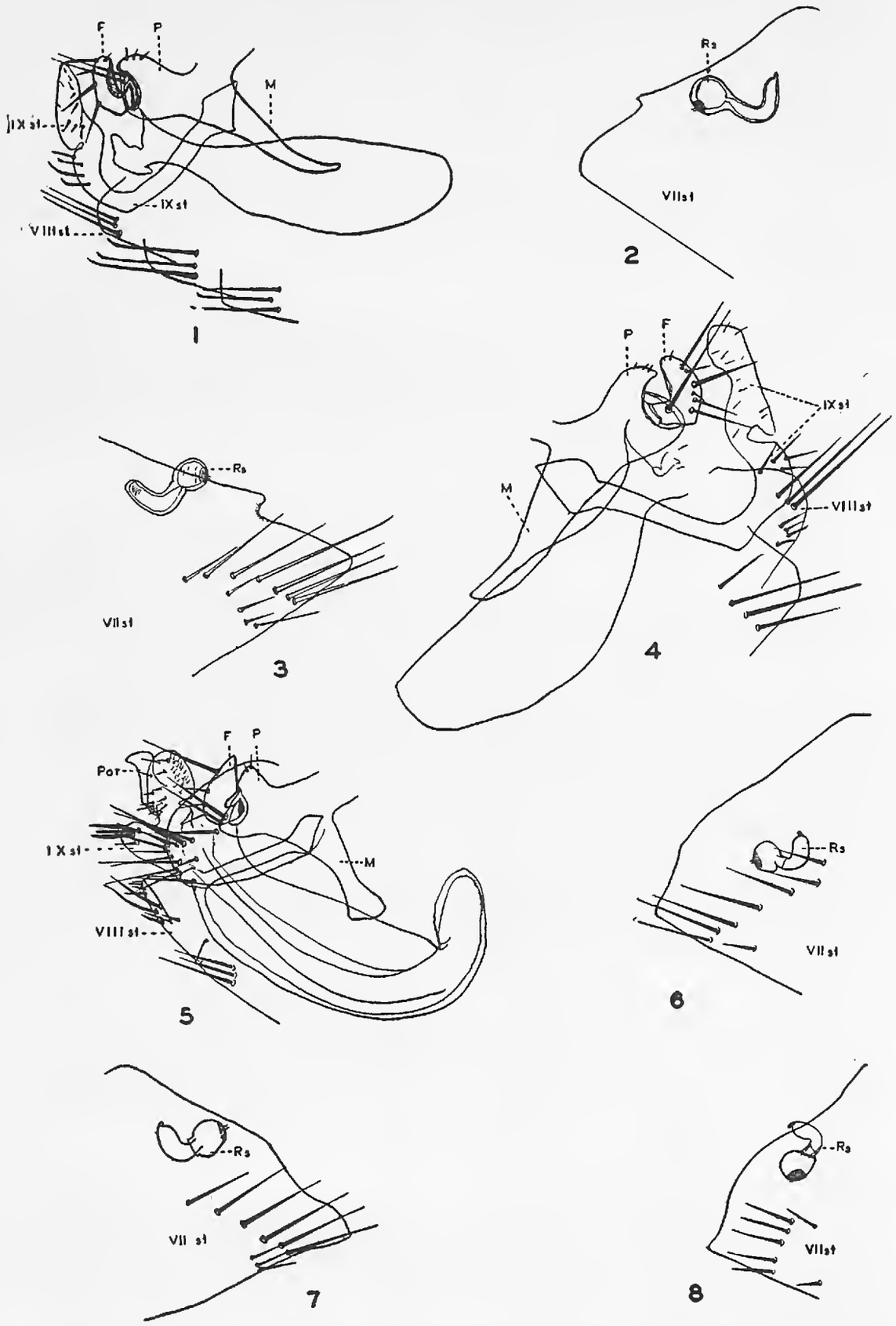
In addition to the types and paratypes examined Mr. Glenn M. Kohls of the Rocky Mountain Spotted Fever Laboratory, Hamilton, Montana, sent me a large series collected by Mr. Frank B. McMurry, United States Fish and Wild Life Service, from *Dipodomys* in Harper County, Oklahoma.

The holotype and allotype are deposited in the United States Public Health Service Plague Investigation Station, San Francisco, California. Paratypes are deposited in the United States National Museum, Washington, D. C., and the Rocky Mountain Spotted Fever Laboratory, Hamilton, Montana.

EXPLANATION OF PLATE I

Fig. 1. Modified segments of *T. aridis* male. Fig. 2. Sternite VII and receptaculum seminis of *T. aridis* female. Fig. 3. Sternite VII and receptaculum seminis of *T. campestris* female. Fig. 4. Modified segments of *T. campestris* male. Fig. 5. Modified segments of *T. setosis* male. Fig. 6. Sternite VII and receptaculum seminis of *T. setosis* female. Fig. 7. Sternite VII and receptaculum seminis of *T. bacchi* female. Fig. 8. Sternite VII and receptaculum seminis of *T. bacchi* female.

Abbreviations: *F*, movable finger of clasper; *P*, immovable process of clasper; *Par*, paramere; *Rs*, receptaculum seminis; *st.* sternite; *M*, manubrium.


F
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8

PLATE I

THRASSIS BACCHI (Rothschild) Jordan

Ceratophyllus bacchi Rothschild, 1905, Nov. Zool. 12:159-160.
Thrassis bacchi (Roths.) Jordan, 1933, Nov. Zool. 39:73.

Female—Head. On the preantennal region there are three bristles in the ocular row, median one small, in addition to 1 bristle near the oral edge. Postantennal region has a row of minute bristles along the antennal groove in addition to 1 large bristle.

Thorax. Pronotal ctenidium of 17 spines. Apical spines on metanotum, 1 on each side.

Abdomen. Apical spines on tergites II, III and IV, 1 on each side.

Modified segments. Receptaculum seminis and sternite VII as illustrated (fig. 7). Tergite VIII armed with 17 to 21 bristles. Stylet one-half as broad as long and bears an apical bristle in addition to 4 lateral bristles.

Length. 1.50 to 1.84 mm., average 1.58 mm.

Allotype female collected 5 miles south of GETTESBURG, POTTER COUNTY, SOUTH DAKOTA, from *Citellus tridecemlineatus* (Mitchill). Additional specimens were taken in POTTER and BROWN COUNTIES, SOUTH DAKOTA, from *Citellus richardsonii richardsonii* (Sabine) and in SPINK COUNTY, SOUTH DAKOTA, from *Citellus franklinii* (Sabine); in ROLETTE COUNTY, NORTH DAKOTA, from *C. r. richardsonii;* in BLAINE, PHILLIPS, VALLEY, DANIELS, ROOSEVELT and SHERMAN COUNTIES, MONTANA, from *C. richardsonii.*

THRASSIS PANSUS (Jordan) Jordan

Ceratophyllus pansus Jordan, 1925, Nov. Zool. 32:109.
Thrassis pansus (Jordan) Jordan, 1933, Nov. Zool. 39:73.

Female—Head. Preantennal region with ocular row of 3 bristles and 1 bristle dorsal to ocular row near oral edge. Postantennal region wth a single row of minute bristles along border of antennal groove in addition to 1 or 2 large bristles. Labial palpi five-jointed, extending well beyond apex of trochanter.

Thorax. Pronotal ctenidium of 17 spines. Apical spines on metanotum, 1 on each side.

Abdomen. Tergites II, III and IV 1 apical spine on each side, occasionally 2 on III. Tergites II to VII with two rows of bristles.

Modified segments. Head of receptaculum seminis globular and pigmented. Tail of receptaculum seminis broadest in distal half, sclerified tip. Sternite VII as illustrated (fig. 8). Tergite VIII bears 13 to 15 bristles. Stylet short, broad, with apical and 3 lateral bristles.

Length. 2.28 to 2.92 mm., average 2.66 mm.

Allotype female collected 14 miles northwest of LORDSBURG, HIDALGO COUNTY, NEW MEXICO, from *Onychomys leucogaster.* Additional specimens were taken in eastern ARIZONA, numerous locations in NEW MEXICO, and as far east as BREWSTER COUNTY, TEXAS. The type hosts are evidently of the genus *Citellus* and the subgenera *Ictidomys* and *Ammospermophilus,* whose range includes the area outlined. Specimens were also collected occasionally from *Peromyscus, Dipodomys, Neotoma* and *Cynomys.*

The writer wishes to express his appreciation to Dr. M. A. Stewart, University of California, Berkeley, California, for his suggestions and aid.

A NEW MOSQUITO RECORD FROM UTAH
(Diptera: Culicidae)

BY DON M. REES
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In October, 1934, and April, 1942, the available mosquito records for Utah were published by the author in this Journal[1, 2]. The following constitutes a new genus and species record for the state.

MANSONIA PERTURBANS (Walker)

Utah: Ogden, Weber County, July 8, 9, 10, 16, August 11, 27, 1943 (Rees).

Adults of this mosquito, both males and females, were taken on the above dates on the Weber River directly south of Ogden in what is known as Riverdale. No larvae were collected, but conditions in the vicinity were suitable for their development.

Adults were collected at this locality in a light-trap, by hand while feeding, and in rabbit hutches and other out-buildings. The adults were fairly abundant but were more numerous in this locality during July than in August.

The author was unsuccessful in finding this species in other parts of Ogden or at several other localities along the Weber River that were inspected for this purpose; but undoubtedly this genus will be found to occur in other parts of the state as this work is extended.

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[1] Rees, Don M. 1934. Mosquito records from Utah. Pan-Pac. Ent., 10:161-165.
[2] Rees, Don M. 1942. Supplementary list of mosquito records from Utah. Pan-Pac. Ent., 18:77-82.